

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BROWN, Andrew, Stephen
Astrazeneca
Global Intellectual Property
P.O. Box 272
Mereside, Alderley Park
Macclesfield, Cheshire SK10 4GR
ROYAUME-UNI

| | |
|--|--|
| Date of mailing (day/month/year) 21 September 2000 (21.09.00) | |
| Applicant's or agent's file reference PHM.70409/WO | IMPORTANT NOTIFICATION |
| International application No. PCT/GB99/03374 | International filing date (day/month/year) 11 October 1999 (11.10.99) |

1. The following indications appeared on record concerning:

☐ the applicant ☐ the inventor ☒ the agent ☐ the common representative

| | | |
|---|-------------------------------|--------------------|
| Name and Address BROWN, Andrew, Stephen Global Intellectual Property, AstraZeneca UK Limited Mereside, Alderley Park Macclesfield Cheshire SK10 4TG United Kingdom | State of Nationality | State of Residence |
| | Telephone No. 01625 514620 | |
| | Facsimile No. 01625 583358 | |
| | Teleprinter No. | |

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☒ the address ☐ the nationality ☐ the residence

| | | |
|---|-------------------------------|--------------------|
| Name and Address BROWN, Andrew, Stephen Astrazeneca Global Intellectual Property P.O. Box 272 Mereside, Alderley Park Macclesfield, Cheshire SK10 4GR United Kingdom | State of Nationality | State of Residence |
| | Telephone No. 01625 514620 | |
| | Facsimile No. 01625 583358 | |
| | Teleprinter No. | |

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

| | |
|---|---|
| <input checked="" type="checkbox"/> the receiving Office | <input type="checkbox"/> the designated Offices concerned |
| <input type="checkbox"/> the International Searching Authority | <input checked="" type="checkbox"/> the elected Offices concerned |
| <input checked="" type="checkbox"/> the International Preliminary Examining Authority | <input type="checkbox"/> other: |

| | |
|---|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer Maria Victoria CORTIELLO Telephone No.: (41-22) 338.83.38 |
|---|--|

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BROWN, Andrew, Stephen
Astrazeneca
Global Intellectual Property
P.O. Box 272
Mereside, Alderley Park
Macclesfield, Cheshire SK10 4GR
ROYAUME-UNI

| | |
|--|--|
| Date of mailing (day/month/year) 27 September 2000 (27.09.00) | IMPORTANT NOTIFICATION |
| Applicant's or agent's file reference PHM.70409/WO | |
| International application No. PCT/GB99/03374 | International filing date (day/month/year) 11 October 1999 (11.10.99) |

1. The following indications appeared on record concerning:

☒ the applicant

 ☐ the inventor

 ☐ the agent

 ☐ the common representative

Name and Address

ASTRAZENECA UK LIMITED
15 Stanhope Gate
London W1Y 1LN
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☒ the person

 ☐ the name

 ☐ the address

 ☐ the nationality

 ☐ the residence

Name and Address

ASTRAZENECA AB
S-151 85 Södertälje
Sweden

State of Nationality

SE

State of Residence

SE

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

| | |
|---|---|
| <input checked="" type="checkbox"/> the receiving Office | <input type="checkbox"/> the designated Offices concerned |
| <input type="checkbox"/> the International Searching Authority | <input checked="" type="checkbox"/> the elected Offices concerned |
| <input checked="" type="checkbox"/> the International Preliminary Examining Authority | <input type="checkbox"/> other: |

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Maria Victoria CORTIELLO

Telephone No.: (41-22) 338.83.38

PCT

**NOTIFICATION OF THE RECORDING
OF A CHANGE**

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BROWN, Andrew, Stephen
Global Intellectual Property,
AstraZeneca UK Limited
Mereside, Alderley Park
Macclesfield
Cheshire SK10 4TG
ROYAUME-UNI

| | |
|---|---|
| Date of mailing (day/month/year) 02 May 2000 (02.05.00) | |
| Applicant's or agent's file reference PHM.70409/WO | IMPORTANT NOTIFICATION |
| International application No. PCT/GB99/03374 | International filing date (day/month/year) 11 October 1999 (11.10.99) |

| | | |
|--|--------------------------------------|---------------------------|
| 1. The following indications appeared on record concerning: <input type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input checked="" type="checkbox"/> the agent <input type="checkbox"/> the common representative | | |
| Name and Address BROWN, Andrew, Stephen Global Intellectual Property, Patents AstraZeneca PLC Mereside, Alderley Park Macclesfield Cheshire SK10 4TG United Kingdom | State of Nationality | State of Residence |
| | Telephone No. 01625 514620 | |
| | Facsimile No. 01625 583358 | |
| | Teleprinter No. | |
| 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input type="checkbox"/> the person <input type="checkbox"/> the name <input checked="" type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence | | |
| Name and Address BROWN, Andrew, Stephen Global Intellectual Property, AstraZeneca UK Limited Mereside, Alderley Park Macclesfield Cheshire SK10 4TG United Kingdom | State of Nationality | State of Residence |
| | Telephone No. 01625 514620 | |
| | Facsimile No. 01625 583358 | |
| | Teleprinter No. | |
| 3. Further observations, if necessary: | | |
| 4. A copy of this notification has been sent to: <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the International Searching Authority <input type="checkbox"/> the International Preliminary Examining Authority </div> <div> <input checked="" type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the elected Offices concerned <input type="checkbox"/> other: </div> </div> | | |

| | |
|--|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer Maria Victoria CORTIELLO Telephone No.: (41-22) 338.83.38 |
|--|---|

PCT

**NOTIFICATION OF THE RECORDING
OF A CHANGE**

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

BROWN, Andrew, Stephen
Global Intellectual Property,
AstraZeneca UK Limited
Mereside, Alderley Park
Macclesfield
Cheshire SK10 4TG
ROYAUME-UNI

| | |
|---|---|
| Date of mailing (day/month/year) 02 May 2000 (02.05.00) | |
| Applicant's or agent's file reference PHM.70409/WO | IMPORTANT NOTIFICATION |
| International application No. PCT/GB99/03374 | International filing date (day/month/year) 11 October 1999 (11.10.99) |

| | | |
|--|-----------------------------------|---------------------------------|
| 1. The following indications appeared on record concerning: <input checked="" type="checkbox"/> the applicant <input type="checkbox"/> the inventor <input type="checkbox"/> the agent <input type="checkbox"/> the common representative | | |
| Name and Address ZENECA LIMITED 15 Stanhope Gate London W1Y 6LN United Kingdom | State of Nationality GB | State of Residence GB |
| | Telephone No. | |
| | Facsimile No. | |
| | Teleprinter No. | |
| 2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning: <input checked="" type="checkbox"/> the person <input checked="" type="checkbox"/> the name <input type="checkbox"/> the address <input type="checkbox"/> the nationality <input type="checkbox"/> the residence | | |
| Name and Address ASTRAZENECA UK LIMITED 15 Stanhope Gate London W1Y 6LN United Kingdom | State of Nationality GB | State of Residence GB |
| | Telephone No. | |
| | Facsimile No. | |
| | Teleprinter No. | |
| 3. Further observations, if necessary: | | |
| 4. A copy of this notification has been sent to: <div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> the receiving Office <input type="checkbox"/> the International Searching Authority <input type="checkbox"/> the International Preliminary Examining Authority </div> <div> <input checked="" type="checkbox"/> the designated Offices concerned <input type="checkbox"/> the elected Offices concerned <input type="checkbox"/> other: </div> </div> | | |

| | |
|--|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Authorized officer Maria Victoria CORTIELLO |
| Facsimile No.: (41-22) 740.14.35 | Telephone No.: (41-22) 338.83.38 |

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

| | |
|---|---|
| Date of mailing (day/month/year) 16 May 2000 (16.05.00) | |
| International application No. PCT/GB99/03374 | Applicant's or agent's file reference PHM.70409/WO |
| International filing date (day/month/year) 11 October 1999 (11.10.99) | Priority date (day/month/year) 13 October 1998 (13.10.98) |
| Applicant GARMAN, Andrew, John | |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
20 April 2000 (20.04.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
|--|--|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland | Authorized officer Pascal Piriou |
| Facsimile No.: (41-22) 740.14.35 | Telephone No.: (41-22) 338.83.38 |

REC'D 15 DEC 2000

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

| | | |
|--|--|---|
| Applicant's or agent's file reference PHM.70409/WO | FOR FURTHER ACTION | See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |
| International application No. PCT/GB99/03374 | International filing date (day/month/year) 11/10/1999 | Priority date (day/month/year) 13/10/1998 |
| International Patent Classification (IPC) or national classification and IPC G01N33/543 | | |
| Applicant ASTRAZENECA AB et al. | | |

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

| | |
|---|--|
| Date of submission of the demand 20/04/2000 | Date of completion of this report 13.12.2000 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized officer Luis Alves, D Telephone No. +49 89 2399 8695  |

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/03374

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1-16 as originally filed

Claims, No.:

1-8 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB99/03374

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | |
|-------------------------------|------------------|
| Novelty (N) | Yes: Claims 7, 8 |
| | No: Claims 1-6 |
| Inventive step (IS) | Yes: Claims 7, 8 |
| | No: Claims 1-6 |
| Industrial applicability (IA) | Yes: Claims 1-8 |
| | No: Claims |

2. Citations and explanations
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Reference is made to the following documents cited in the International search report:

D1: WO-A-97/47390

D2: WO-A-97/00442

Section V:

1. The characterising features of the device defined in claim 1 are: (1) a microfabricated diffusion chamber, (2) a diffusion region within (1), and (3) at least one inlet for introducing liquid into (1) and (2). The operations taking place inside the device are only defining the device insofar as said device must be suitable for the performance of said operations (see also point VIII.1 below).

The same analysis is valid for claim 2, which concerns a device comprising: (1) an internal surface defining a microfabricated conduit, (2) a diffusion region within (1), (3) at least one inlet for introducing liquid into (1) and (2), and (4) an outlet for exiting liquid from (1).

The subject-matter of claims 1 to 6 does not seem to comply with the requirements of Article 33(2) PCT.

D1 discloses (see claim 1) two liquid inlets (items a. and b.), a channel in fluid communication with said two inlets (item c) and two outlets in fluid communication with the said channel (items e. and f.). Such a device is illustrated in Fig. 2 (in particular, see Fig.2 in comparison to Fig. 6B in the present application), where the diffusion region, of length "L", is represented by "7" (see also p.23, second paragraph).

Thus, D1 discloses a microdevice comprising all the features in present claims 1 and 2 (Article 33(2) PCT). As described above, the device disclosed in D1 comprises two outlets. Thus, the subject-matter of claim 4 is not novel. The device may also comprise a detector (see p.19, second paragraph). Thus, the subject-matter of claim 3 is disclosed. The laminar flow is divided in two outlet streams. Therefore, the subject-matter of claims 5 and 6 is disclosed.

D2 also discloses all the features in claims 1 to 6 (see claim 1, Fig.2 and p.19, ln.33 to p.20, ln.15).

2. The device disclosed in any of D1 and D2 is used for liquid-liquid extraction. The observation of differential diffusion between bound and non-bound test compound is neither disclosed nor suggested by any of the available documents. Thus, the subject-matter of present method claims 7 and 8 is novel and seems to involve an inventive step (Article 33(2) and (3) PCT).

Section VIII:

1. The subject-matter of independent claims 1 and 2 lacks clarity (Article 6 PCT) because the functional definitions following the expression "such that" (in item (3) in claim 1 and item (4) in claim 2, respectively) do not enable the skilled person to determine which technical features are necessary to perform the stated functions.
2. The subject-matter of claims 2 and 8 lacks clarity (Article 6 PCT) because the expression "which defines an area which is smaller than the area of cross section, or of the length, of the microfabricated conduit" is not clear.
3. Claim 4 lacks clarity (Article 6 PCT) because it concerns the "outlet" which is a feature not included in claim 1, to which claim 3, and therefore claim 4, refer back to.
4. The dependency of claim 5 appears to be incorrect since said claim refers back to claim 3 but concerns features which are defined only in claim 4.
5. The term "diffusion area" used in claim 5 is not clear from the claim alone and therefore renders said claim unclear (Article 6 PCT). From the description (see p.7, lines 19 to 22) it seems that the arrangement of the channels defined in claim 5 should exist only in combination with a diffusion region having a cross section smaller than the cross section of the chamber or conduit. The term "diffusion area" used in claim 5 is not clear because there is laminar flow in the whole conduit and therefore the term "diffusion area" could refer to the whole of the conduit.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

| | | |
|--|---|--|
| Applicant's or agent's file reference PHM.70409/W0 | FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. | |
| International application No. PCT/GB 99/ 03374 | International filing date (day/month/year) 11/10/1999 | (Earliest) Priority Date (day/month/year) 13/10/1998 |
| Applicant ZENECA Limited et al. | | |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

DEVICE COMPRISING A MICROFABRICATED DIFFUSION CHAMBER

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

T/GB 99/03374

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N33/543 G01N30/00 B01J19/00 B01L3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | WO 97 47390 A (UNIV WASHINGTON) 18 December 1997 (1997-12-18) | 1,3-6 |
| A | claim 1; figure 6 | 2,7,8 |
| X | WO 97 00442 A (UNIV WASHINGTON) 3 January 1997 (1997-01-03) | 1,3-6 |
| A | cited in the application page 7, line 34 -page 9, line 30 | 2,7,8 |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

26 January 2000

Date of mailing of the international search report

04/02/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gundlach, B

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

/GB 99/03374

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|---|--|
| WO 9747390 | A | 18-12-1997 | AU 3570797 A EP 0910474 A US 5971158 A | 07-01-1998 28-04-1999 26-10-1999 |
| WO 9700442 | A | 03-01-1997 | AU 6541596 A CA 2222126 A EP 0839318 A JP 11508182 T US 5932100 A | 15-01-1997 03-01-1997 06-05-1998 21-07-1999 03-08-1999 |